

840409

15

WXYZ
READING GUIDE
ATLAS

BRITANNICA
JUNIOR
ENCYCLOPÆDIA

2256.1
E901
15

2256.1
15
623

外文书库
8404080

BRITANNICA JUNIOR ENCYCLOPÆDIA

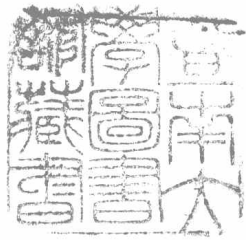
For Boys and Girls

15

W X Y Z

Reading Guide

Atlas



Prepared under the supervision of the editors of

ENCYCLOPÆDIA BRITANNICA

ENCYCLOPÆDIA BRITANNICA, INC.

• Chicago • Geneva • London • Manila • Paris •

• Rome • Seoul • Sydney • Tokyo • Toronto •

©

1934, 1937, 1938, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949,
1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962,
1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1975, 1976,
1977, 1978, 1979, 1980, 1981

1982

By Encyclopædia Britannica, Inc.

Copyright under International Copyright Union

All Rights Reserved under Pan American and Universal Copyright Conventions

By Encyclopædia Britannica, Inc.

No part of this work may be reproduced or utilized in any form or by any means,
electronic or mechanical, including photocopying, recording, or by any information storage
and retrieval system, without permission in writing from the publisher.

Library of Congress Catalog Card Number: 80-67751

International Standard Book Number: 0-85229-388-7

KEY TO PRONUNCIATION

It is of especial importance that an encyclopaedia for children give the pronunciation where the boy or girl might go astray. In all such instances the pronunciation in BRITANNICA JUNIOR ENCYCLOPÆDIA is clearly marked. The accent is shown by the mark ('). The sounds for the different letters, when not self-evident, are as follows:

ā as in *pale*
ā as in *care*
ă as in *bat*
ä as in *farm*
â as in *task*
a as in *ball*
ē as in *be*
ē as in *met*

ē as in *her*
ī as in *mice*
ī as in *tin*
ō as in *cold*
ō as in *not*
ô as in *for*
oi as in *oil*
ōō as in *loot*

ou as in *out*
ū as in *use*
ū as in *run*
ų as in *pull*
ū as in French *début*, German *über*
g (always hard) as in *gay*
j for *g* as in *gentle*
K for *ch* as in German *Bach* or Scottish *loch*

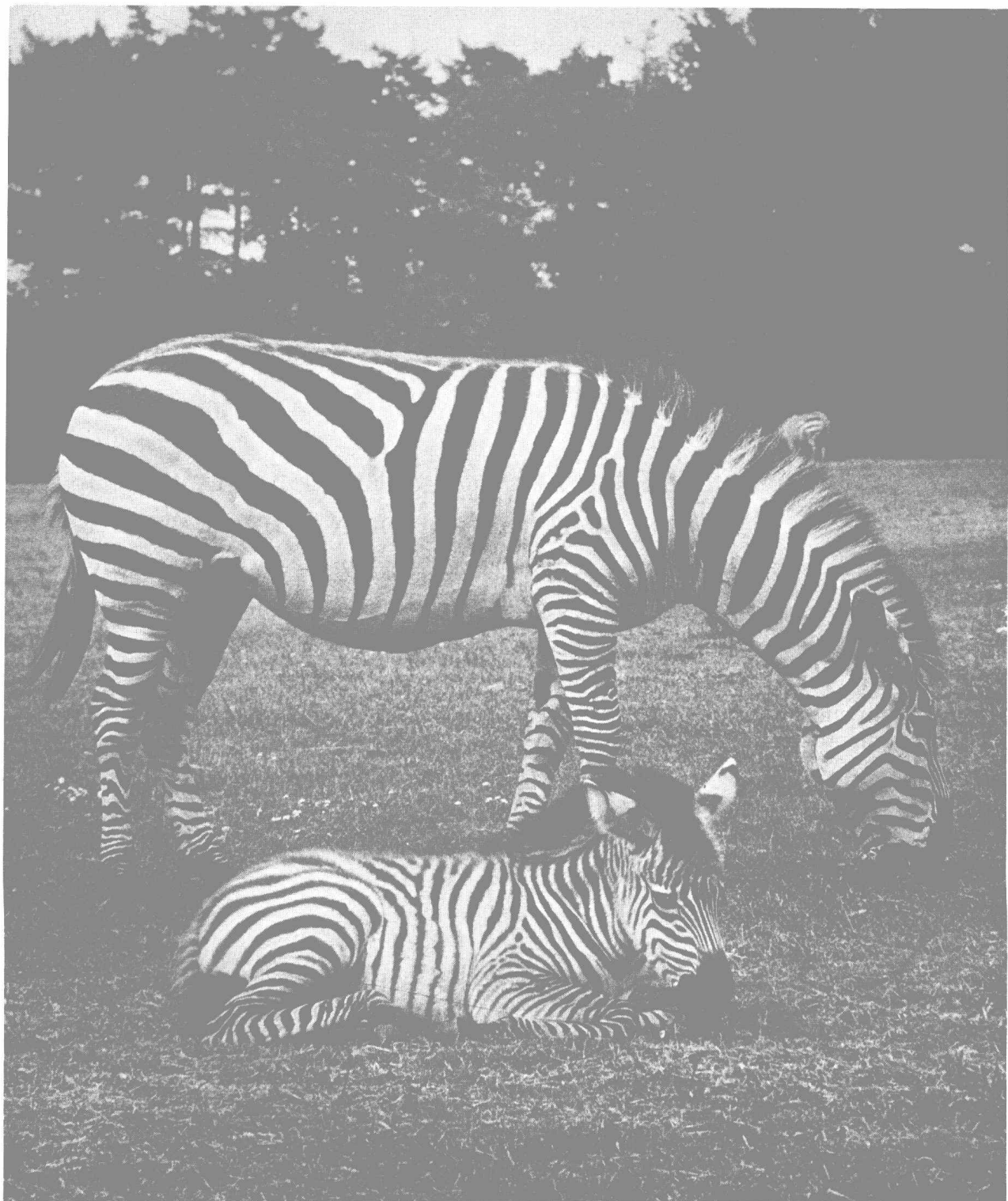
ñ (nasal) as in French *bon*
th as in *think*
th as in *thee*
t as in *picture* (Sound varies
from *t* to *ch*)
z as in *pleasure* (Sound varies
from *z* to *zh*)



THE UNIVERSITY
OF CHICAGO

BRITANNICA JUNIOR ENCYCLOPÆDIA IS PUBLISHED WITH THE EDITORIAL ADVICE OF THE FACULTIES OF THE UNIVERSITY OF CHICAGO AND THE UNIVERSITY LABORATORY SCHOOLS

Let knowledge grow from more to more and thus be human life enriched



W. Suschitzsky

A baby zebra rests as its mother grazes. Although zebras have never been domesticated, they may be seen in circuses and zoos. Their coloration makes them the most spectacular members of the horse family. See ZEBRA.

此为试读, 需要完整PDF请访问: www.ertongbook.com

Rena, Norway	B2	129	Rewari, India	C3	134	Richards-Gebaur A.F.B., Mo.	P6	59	Richmondville, N.Y.	M5	73
Rencon, N. Mex.	D3	70	Rewata (isl.), Indon.	F7	137	Richardson, Ky.	M5	43	Rich Mountain, Ark.	B4	20
Rendsburg, W. Germany	C1	122	Rewey, Wis.	F10	105	Richardson, Tex.	H1	92	Rich Square, N.C.	L2	75
Rendville, Ohio	F6	79	Rex, Ark.	E2	20	Richardson (county), Nebr.	J4	63	Richtex, S.C.	E3	86
Renfrew, Ontario	J6	11	Rex, N.C.	H5	74	Richardson (lakes), Me.	B6	47	Richthofen (mt.), Colo.	G1	24
Renfrew, Pa.	C4	84	Rexburg, Idaho	G6	33	Richardson Isl., N.W. Terr.	E2	10	Richton, Miss.	G8	57
Renfrew, Scotland	A1	118	Rexford, Kans.	B2	40	Richardson (lakes), Me.	B6	47	Richton Park, Ill.	B3	34
Renfrow, Okla.	G1	80	Rexford, Mont.	A2	60	Richardson, Tenn.	B4	90	Richvale, Calif.	D4	22
Rengat, Indon.	C6	136	Rexton, Mich.	D2	52	Richardsville, Ky.	E6	42	Richvalley, Ind.	F3	36
Renick, Mo.	H4	58	Rexville, Ind.	G7	37	Richardson, N. Dak.	F6	76	Richview, Ill.	D5	35
Renick, W. Va.	F4	102	Reydel, Ark.	G5	21	Richardson, N.Y.	D6	72	Richville, Mich.	F5	53
Renigunta, India	C6	135	Reydon, Okla.	C3	80	Richburg, S.C.	E2	86	Richville, Minn.	C4	54
Renkum, Neth.	G3	123	Reyes (point), Calif.	B6	22	Richburg, N.Y.	E2	86	Richwood, N.Y.	K2	73
Renner, S. Dak.	R6	89	Reykjavik, Iceland	B2	117	Rich Creek, Va.	C6	98	Richwood, Ga.	E6	31
Rennes, France	C3	120	Reyno, Ark.	J1	21	Richy, Miss.	C4	56	Richwood, Minn.	C4	54
Rennett (cape), N.W. Terr.	G1	10	Reynolds, Ga.	D5	30	Richy, Mont.	L3	61	Richwood, Ohio	D5	78
Renno, S.C.	D2	86	Reynolds, Ill.	C2	34	Richfield, Idaho	D6	33	Richwood, W. Va.	F4	102
Reno, Ga.	D9	31	Reynolds, Ind.	D3	36	Richfield, Kans.	A4	40	Richwood, Wis.	J9	105
Reno, Ill.	D5	35	Reynolds, Nebr.	G4	63	Richfield, Minn.	E6	55	Richwoods, Mo.	L6	105
Reno, Nev.	B3	64	Reynolds, N. Dak.	R4	77	Richfield, N.C.	E4	74	Richardsville, Iowa	M3	39
Reno, Ohio	H7	79	Reynolds (county), Mo.	L8	59	Richfield, Pa.	H4	85	Ricketts, Iowa	B4	38
Reno, Pa.	C3	84	Reynolds Bridge, Conn.	C2	26	Richfield, Utah	B5	95	Rickman, Tenn.	L2	91
Reno, Tex.	E1	92	Reynoldsburg, Ohio	E6	79	Richfield, Wis.	K1	104	Rickreall, Oreg.	D3	82
Reno (county), Kans.	D4	41	Reynolds Station, Ky.	D5	42	Richfield Sprs., N.Y.	K5	73	Rico, Colo.	C7	24
Reno (lake), Minn.	C5	55	Reynoldsville, Pa.	D3	84	Richford, N.Y.	H6	73	Ridderkerk, Neth.	E4	123
Renova, Miss.	C3	56	Rezaieh, Iran	D2	132	Richford, Vt.	B1	96	Riddle, Idaho	B7	33
Renovo, Pa.	G3	84	Rzeka, U.S.S.R.	C3	127	Rich Hill, Mo.	D6	58	Riddle, Oreg.	D5	82
Rensselaer, Ind.	C3	36	Rhame, N. Dak.	C7	76	Richland, Fla.	D3	28	Riddesburg, Pa.	F5	84
Rensselaer, Mo.	J3	59	Rhatikon (mts.), Austria	A4	125	Richland, Ga.	C6	31	Riddletown, Tenn.	J2	90
Rensselaer, N.Y.	N5	73	Rheatown, Tenn.	Q2	91	Richland, Ind.	C9	37	Riddleville, Ga.	G5	30
Rensselaer (county), N.Y.	O5	73	Rhed, W. Germany	C3	122	Richland, Iowa	K6	39	Riderwood, Ala.	B6	15
Rensselaer Falls, N.Y.	K1	73	Rheden, Neth.	G3	123	Richland, Kans.	G3	41	Ridge, La.	F6	44
Rentchler, Ill.	B6	35	Rheine, W. Germany	B2	122	Richland, Mich.	D6	53	Ridge, Md.	J8	49
Rentiesville, Okla.	M4	81	Rheinsberg, E. Germany	E2	122	Richland, Mo.	H7	58	Ridge, Mont.	M5	61
Renton, Wash.	B2	100	Rhenen, Neth.	F4	123	Richland, Nebr.	G3	63	Ridgecrest, Calif.	H8	23
Rentz, Ga.	G6	31	Rheydt, W. Germany	B3	122	Richland, N.J.	D5	69	Ridge Farm, Ill.	F4	34
Renville, Minn.	C6	55	Rhine, Ga.	F7	31	Richland, N.Y.	H3	73	Ridgefield, Conn.	A3	26
Renville (county), Minn.	C6	55	Rhine (river), Europe	E3	117	Richland, Oreg.	K3	83	Ridgefield, N.J.	B2	68
Renville (county), N. Dak.	G2	76	Rhinebeck, N.Y.	N7	73	Richland, Pa.	K5	85	Ridgefield, Wash.	C5	100
Renwick, Iowa	E3	38	Rhinecliff, N.Y.	N7	73	Richland, S.C.	A2	86	Ridgefield Park, N.J.	F2	68
Reo, Indon.	G7	137	Rhineland, Mo.	J5	59	Richland, S. Dak.	R8	89	Ridgeland, Miss.	D6	57
Represa, Calif.	C8	23	Rhineland, Wis.	H4	104	Richland, Tex.	H6	92	Ridgeland, S.C.	E7	86
Repton, Ala.	D8	15	Rhineland-Palatinate (state), W. Germany	B4	122	Richland, Wash.	F4	101	Ridgeland, Wis.	B5	104
Repton, Ky.	E2	42	Rhoda, La.	H7	44	Richland (county), Ill.	E5	35	Ridgeley, W. Va.	J1	103
Republic, Ala.	E3	14	Rhode (isl.), R.I.	J6	51	Richland (county), Mont.	M3	61	Ridgely, Md.	L5	49
Republic, Kans.	E2	41	Rhode Island (state), U.S.	50, 51		Richland (co.), N. Dak.	R7	77	Ridgely, Tenn.	B2	90
Republic, Mich.	B2	52	Rhode Island (sound), U.S.	J7	51	Richland (county), Ohio	E4	78	Ridgeside, Tenn.	L4	91
Republic, Mo.	E8	58	Rhode Island (sound), U.S.	J7	51	Richland (county), S.C.	F3	87	Ridge Spring, S.C.	D4	86
Republic, Ohio	D3	78	Rhodet, W. Va.	D5	102	Richland (county), Wis.	F9	105	Ridgetop, Tenn.	H2	90
Republic, Wash.	G2	101	Rhodes, Greece	E4	126	Richland (parish), La.	G2	44	Ridgetown, Ontario	E7	10
Republic (county), Kans.	E2	41	Rhodes, Iowa	G5	39	Richland Balsam (mt.), N.C.	E8	74	Ridgeview, S. Dak.	H3	88
Republican (riv.), Colo.	P3	25	Rhodes, Mich.	E5	53	Richland Center, Wis.	F9	105	Ridgeville, Ind.	G4	36
Republican (riv.), Kans.	E2	41	Rhodes (Ródos) (isl.), Greece	E4	126	Richlands, N.C.	K5	75	Ridgeville, Md.	F3	48
Republican (riv.), Nebr.	G5	63	Rhodesia (Zimbabwe)	F6	141	Richlands, Va.	E1	98	Ridgeville, N.C.	G2	74
Republican City, Nebr.	E4	63	Rhodes Peak (mt.), Idaho	D3	33	Richlands, W. Va.	F5	102	Ridgeville, S.C.	G5	87
Republican Grove, Va.	F7	98	Rhodes Point, Md.	K9	49	Richland Sprs., Tex.	F6	92	Ridgeville Corners, Ohio	B3	78
Repulse Bay, N.W. Terr.	H2	11	Rhodope (mts.), Bulgaria	D3	126	Richlandtown, Pa.	M5	85	Ridgeway, Iowa	K2	39
Resaca, Peru	C3	114	Rhomet, Tex.	G4	92	Richmond, Ala.	D6	15	Ridgeway, Minn.	G7	55
Resaca, Ga.	C1	30	Rhön (mts.), Germany	D3	122	Richmond, Calif.	J1	22	Ridgeway, Mo.	D2	58
Resaca, Ohio	D5	78	Rhond, Wales	E5	119	Richmond, England	F3	119	Ridgeway, N.C.	J2	75
Reserve, Kans.	G2	41	Rhône (river), France	F5	120	Richmond, Ill.	E1	34	Ridgeway, Ohio	C4	78
Reserve, La.	M3	45	Rhyolite, Nev.	E6	65	Richmond, Ind.	H5	37	Ridgeway, S.C.	F3	87
Reserve, Mont.	M2	61	Rialto, Calif.	E10	23	Richmond, Iowa	K6	39	Ridgeway, Va.	E7	98
Reserve, Wis.	D4	104	Rialto, Ohio	C9	79	Richmond, Kans.	G3	41	Ridgeway, W. Va.	K2	103
Resistencia, Arg.	D5	115	Riau (Riouw) (arch.), Indon.	D5	136	Richmond, Ky.	J5	43	Ridgeway, Wis.	F10	105
Resita, Romania	C2	126	Riaz, Spain	E2	121	Richmond, Maine	D7	47	Ridgewood, N.J.	E2	68
Resolute Bay, N.W. Terr.	G1	10	Rib (mt.), Wis.	G5	104	Richmond, Mass.	A3	50	Ridgway, Colo.	D6	24
Resolution (isl.), N.W. Terr.	K3	11	Ribadeo, Spain	C1	121	Richmond, Mich.	D6	53	Ridgway, Ill.	E6	35
Rest, Va.	H2	99	Ribble (river), England	E4	119	Richmond, Minn.	D5	55	Ridgway, Pa.	E3	84
Reston, Va.	K3	99	Ribeirão Preto, Brazil	F5	115	Richmond, Mo.	D4	58	Rid, Nepal	D3	134
Reszel, Poland	E1	128	Ribera, N. Mex.	D3	70	Richmond, N.H.	B6	67	Riding Mt. (park), Man.	F5	10
Retalhuleu, Guat.	B2	109	Riberalt, Bolivia	D4	114	Richmond, N.Y.	C3	72	Ridley, Tenn.	G3	90
Rethel, France	F3	129	Rib Falls, Wis.	G6	104	Richmond (Grand River), Ohio	H2	78	Ridley Park, Pa.	M7	85
Réthymnon, Greece	D5	126	Rib Lake, Wis.	F5	104	Richmond, Ohio	J5	78	Ridlonville, Maine	C6	47
Retsil, Wash.	A2	100	Rice, Calif.	L9	23	Richmond, Quebec	K8	11	Rid, Austria	D2	125
Retrof, N.Y.	E5	72	Rice, Minn.	D5	55	Richmond, Tex.	J8	93	Riegelsville, N.J.	C2	68
Rettow means archipelago (Japanese)	C2	125	Rice, Tex.	H5	92	Richmond, Utah	C2	94	Riegelsville, Pa.	M4	85
Retz, Austria	C2	125	Rice, Va.	H6	99	Richmond, Vt.	A2	96	Riegelwood, N.C.	J6	75
Reubens, Idaho	B3	33	Rice (county), Kans.	D3	41	Richmond, * Va.	K5	99	Rienzi, Miss.	G1	25
Reus, Spain	G2	121	Rice (county), Minn.	E6	55	Richmond (county), Ga.	H4	30	Riesa, E. Germany	E3	126
Reusens, Va.	F6	98	Rice (lake), Minn.	E4	54	Richmond (county), N.Y.	C3	72	Riesel, Tex.	H6	92
Reutlingen, W. Germany	C4	122	Rice (mt.), N.H.	D2	66	Richmond (county), N.C.	F4	74	Rieth, Oreg.	J2	83
Reutte, Austria	B3	125	Riceboro, Ga.	K7	31	Richmond (county), Va.	K5	99	Rieti, Italy	D3	124
Reville (mt. range), Nev.	E4	65	Rice Lake, Minn.	E5	55	Richmond Battlefield (park), Va.	K6	99	Riezes, Belgium	D7	123
Reville Peak (mt.), Nev.	E5	65	Rice Lake, Wis.	C5	104	Richmond Beach, Wash.	A1	100	Riffe, Wash.	C4	100
Revell, Md.	J4	49	Rices Landing, Pa.	C6	84	Richmond Corner, Maine	D7	47	Rifle, Colo.	D3	24
Revelstoke, Br. Col.	E5	10	Riceville, Iowa	H2	39	Richmond Dale, Ohio	E7	79	Rifle (river), Mich.	E4	53
Revere, Mass.	D6	50	Riceville, Pa.	C2	84	Richmond Furnace, Mass.	A3	50	Riga, U.S.S.R.	B3	127
Revere, Minn.	C6	55	Riceville, Tenn.	M4	91	Richmond Gulf, Quebec	J4	11	Riga (gulf), U.S.S.R.	B3	127
Revere, Mo.	J2	58	Rich, Miss.	D2	56	Richmond Heights, Mo.	P3	59	Riga (lake), Conn.	B1	26
Revere, W. Va.	E3	102	Rich (county), Utah	C2	94	Richmond Heights, Ohio	J9	79	Rigby, Idaho	G6	33
Reverie, Tenn.	A3	90	Rich (mt.), Ark.	B4	20	Richmond Highlands, Wash.	A1	100	Rigdon, Ind.	F4	36
Reville, S. Dak.	R3	89	Richard City, Tenn.	K5	91	Richmond Hill, Ga.	K7	31	Riggins, Idaho	B4	33
Revúca, Czech.	F2	125	Richards, Iowa	D4	38	Richmond-upon-Thames, England	B5	119	Rigo, Papua N.G.	C7	136
Rvuelto (creek), N. Mex.	F3	70	Richards, Mo.	D7	58				Rigolet, Lab., Newf.	L5	11
Rew, Pa.	F2	84							Riihimäki, Finland	E2	129
Rewa, India	D4	134							Rijeka (Fiume), Yugo.	A2	126

Rijssen, Neth.	H3	23	Ripley (county), Mo.	L9	59	Riverton, Va.	H3	99	Robinson, Ill.	F5	35
Riley, Ind.	C6	37	Riplinger, Wis.	E6	104	Riverton, Wash.	A2	100	Robinson, Iowa	K4	39
Riley, Kans.	F2	41	Ripon, Calif.	D6	22	Riverton, W. Va.	H3	103	Robinson, Kans.	G2	41
Riley, Ky.	G5	42	Ripon, England	F3	119	Riverton, Wyo.	D2	106	Robinson, Ky.	J4	43
Riley, Maine	C6	47	Ripon, Wis.	J8	105	Riverton Heights, Wash.	B2	100	Robinson, N. Dak.	L5	77
Riley (county), Kans.	F2	41	Rippey, Iowa	E5	38	River View, Ala.	H5	14	Robinson (lake), Wis.	D3	104
Illitito, Ariz.	D6	19	Ripplemead, Va.	C6	98	Riverview, Mich.	B7	53	Robinson Crusoe (isl.), Chile	C6	115
Rilton, Pa.	C5	84	Rippon, W. Va.	L2	103	Riverville, Va.	G5	98	Robinsons, Maine	H3	46
Rimal, Ar (des.), Saudi Ar.	F5	133	Ripton, Vt.	A3	96	Rives, Mo.	M10	59	Robinsonville, Miss.	D1	56
Rimavská Sobota, Czech.	F2	125	Ririe, Idaho	G6	33	Rives, Tenn.	C2	90	Robjohn, Ala.	B6	15
Rimer, Pa.	C4	84	Risco, Mo.	N9	59	Rives Junction, Mich.	E6	53	Rob Roy, Ark.	G5	21
Rimersburg, Pa.	D3	84	Rishra, India	E1	134	Rivesville, W. Va.	F1	102	Rob Roy, Ind.	C4	36
Rimini, Italy	D2	124	Rising City, Nebr.	G3	63	Riviera, Tex.	F10	93	Robson (mt.), Br. Col.	E5	10
Rimini, S.C.	G4	87	Rising Sun, Ind.	A1	30	Riviera Beach, Fla.	F5	29	Robstown, Tex.	G10	93
Rimnicu Sărat, Rom.	D2	126	Rising Star, Tex.	F5	92	Rivière-du-Loup, Quebec	K6	11	Roby, Tex.	D5	92
Rimnicu Vilcea, Rom.	C2	126	Rising Sun, Ind.	H7	37	Rivulet, Mont.	B4	60	Roca, Nebr.	H4	63
Rimouski, Quebec	K6	11	Rising Sun, Md.	K2	49	Rixford, Pa.	F2	84	Rocha, Uruguay	E6	115
Rinard, Ill.	E5	35	Risinguns, Ohio	C3	78	Rix Mills, Ohio	G6	79	Rochdale, England	G2	118
Rinard, Iowa	D4	38	Rison, Ark.	F6	21	Riyadh, * Saudi Ar.	E5	132	Rochdale, Mass.	G4	50
Rinçon, Ga.	B6	31	Risör, Norway	B3	129	Riyah, Yemen (Aden)	E7	132	Rochefort, Belgium	F7	123
Rincon, N. Mex.	C6	71	Risut, Oman	F6	133	Rize, Turkey	D1	132	Rochefort, France	C5	120
Rincon Peak (mt.), Ariz.	E6	19	Rita, La.	J7	45	Rjukan, Norway	B3	129	Roche Harbor, Wash.	B2	100
Rindge, N.H.	B6	67	Rita Blanca (riv.), Tex.	B2	92	Roachdale, Ind.	D5	36	Rochelle, Ga.	F7	31
Rinehart, W. Va.	E2	102	Ritchey, Mo.	D9	58	Roachtown, N.J.	C5	69	Rochelle, Ill.	D2	34
Riner, Va.	D6	98	Ritchie, Md.	C5	48	Road Town, * V.I.	H1	111	Rochelle, Tex.	E6	92
Rineyville, Ky.	F5	42	Ritchie (county), W. Va.	D2	102	Roan or Brown (cliffs), Utah	E4	95	Rochelle Park, N.J.	B2	68
Ringgold, Ga.	B1	30	Ritchies (arch.), India	F6	135	Roane (county), Tenn.	M3	91	Rochepot, Mo.	H5	58
Ringgold, La.	D2	44	Ritner, Ky.	H7	43	Roane (county), W. Va.	D3	102	Rochert, Minn.	C4	54
Ringgold, Md.	D2	48	Ritter, Oreg.	H3	83	Roan High Knob (mt.), N.C.	C7	74	Rochester, England	G5	119
Ringgold, Nebr.	D3	62	Rittman, Ohio	G4	78	Roan Mountain, Tenn.	R2	91	Rochester, Ill.	D4	35
Ringgold (county), Iowa	E7	38	Ritzville, Wash.	G3	101	Roann, Ind.	F3	36	Rochester, Ind.	E2	36
Ringle, Wis.	G6	104	Rivanna (river), Va.	H5	99	Roanne, France	F4	120	Rochester, Iowa	L5	39
Ringling, Mont.	F4	60	Rivas, Nicaragua	C3	109	Roanoke, Ala.	H4	14	Rochester, Ky.	D6	42
Ringling, Okla.	G6	80	River, Ind.	G3	36	Roanoke, Ill.	D3	34	Rochester, Mass.	L6	51
Ringoes, N.J.	D3	68	Riverbank, Calif.	E6	22	Roanoke, Ind.	G3	36	Rochester, Mich.	F6	53
Ringold, Okla.	M6	81	Riverdale, Calif.	E7	23	Roanoke, La.	E6	44	Rochester, Minn.	F6	55
Ringsted, Iowa	D2	38	Riverdale, Fla.	E2	28	Roanoke, Mo.	G4	58	Rochester, Nev.	C2	64
Ringtown, Pa.	K4	85	Riverdale, Ga.	D3	30	Roanoke, Tex.	F1	92	Rochester, N.H.	D5	67
Ringwood, Ill.	E1	34	Riverdale, Ill.	B2	34	Roanoke, Va.	D6	98	Rochester, N.Y.	E4	72
Ringwood, N.J.	E1	68	Riverdale, Kans.	E4	41	Roanoke, W. Va.	E3	102	Rochester, Ohio	F3	78
Ringwood, Okla.	F2	80	Riverdale, Md.	B4	48	Roanoke (county), Va.	D6	98	Rochester, Pa.	B4	84
Rio, Ill.	C2	34	Riverdale, Mich.	E5	53	Roanoke (isl.), N.C.	O3	75	Rochester, Tex.	E4	92
Rio, La.	L5	45	Riverdale, Mont.	E3	60	Roanoke (river), N.C.	L2	75	Rochester, Vt.	B3	96
Rio, W. Va.	H2	103	Riverdale, Nebr.	E4	63	Roanoke (river), Va.	H7	99	Rochester, Wash.	C4	100
Rio, Wis.	J9	105	Riverdale, N.J.	E2	68	Roanoke Rapids, N.C.	K2	75	Rochester, Wis.	K3	104
Rio Arriba (county), N. Mex.	B2	70	Riverdale, N. Dak.	H5	76	Roaring, W. Va.	H3	103	Rochester Mills, Pa.	D4	84
Riobamba, Ecuador	C3	114	Riverdale, Utah	C2	94	Roaring Branch, Pa.	J2	85	Rochford, S. Dak.	B5	88
Rio Blanco (county), Colo.	C3	24	River Edge, N.J.	B1	68	Roaring Creek, Pa.	K4	85	Rock, Kans.	F4	41
Rio Branco, Brazil	D3	114	River Falls, Wis.	A6	104	Roaring Fork (riv.), Colo.	E4	24	Rock, Mich.	B2	52
Rio Brazos (river), N. Mex.	C2	70	River Forest, Ill.	B2	34	Roaring River, N.C.	C2	74	Rock (county), Minn.	B7	55
Rio Chama (river), N. Mex.	C2	70	River Grove, Ill.	A2	34	Roaring Spring, Pa.	F5	84	Rock (county), Nebr.	E2	63
Rio Creek, Wis.	L6	105	Riverhead, N.Y.	F2	72	Roaring Springs, Tex.	D4	92	Rock (county), Wis.	H10	105
Rio Cuarto, Arg.	D6	115	River Hills, Wis.	M1	104	Roatán, Honduras	C1	109	Rock (lake), Wash.	H3	101
Rio Cuchillo Negro (riv.), N. Mex.	B5	71	Riverlea, Ohio	D5	78	Robards, Ky.	B5	42	Rock (river), Ill.	C2	34
Rio de Janeiro, Brazil	F5	115	Rivermines, Mo.	L7	59	Robat, Pakistan	H4	133	Rock (river), Iowa	A2	38
Rio Dell, Calif.	A3	22	River Oaks, Tex.	E2	92	Robbins, Calif.	B8	23	Rock (river), Wis.	H1	104
Rio Felix (river), N. Mex.	E5	71	River Point, R.I.	H6	51	Robbins, Ill.	B2	34	Rockaway, N.J.	D2	68
Rio Gallegos, Arg.	D8	115	River Ridge, Ala.	D7	15	Robbins, N.C.	F4	74	Rockaway, Oreg.	C2	82
Rio Grande, Brazil	E6	115	River Rouge, Mich.	B7	53	Robbins, Tenn.	M2	91	Rock Bluff, Fla.	B1	28
Rio Grande, Mexico	D3	108	Riverside, Ala.	F3	14	Robbinsdale, Minn.	G5	55	Rockbridge, Ill.	C4	35
Rio Grande, Ohio	F8	79	Riverside, Calif.	E10	23	Robbinston, Maine	J5	47	Rockbridge, Ohio	E6	79
Rio Grande (co.), Colo.	G7	24	Riverside, Conn.	A4	26	Robbinsville, N.J.	D3	68	Rockbridge, Wis.	F9	105
Rio Grande (res.), Colo.	E7	24	Riverside, Ga.	E8	31	Robbinsville, N.C.	C8	74	Rockbridge (co.), Va.	F5	98
Rio Grande (riv.), Mex.-U.S.	D1	108	Riverside, Ill.	B2	34	Robe, Wash.	D2	100	Rockcastle (co.), Ky.	J6	43
Rio Grande (riv.), N. Mex.	C5	71	Riverside, Ind.	C4	36	Robel, E. Germany	E2	122	Rockcastle (riv.), Ky.	J6	43
Rio Grande (riv.), Tex.	D9	93	Riverside, Iowa	K6	39	Robeline, La.	D3	44	Rock Cave, W. Va.	F3	102
Rio Grande City, Tex.	F11	93	Riverside, Ky.	E6	42	Robert, N.C.	F5	74	Rock City, Ill.	D1	34
Rio Grande Pyramid (mt.), Colo.	E7	24	Riverside, Md.	F7	48	Robertsonville, N.C.	L3	75	Rock City Falls, N.Y.	M4	73
Rio Hondo, Tex.	G11	93	Riverside, Mass.	B7	50	Roberta, Ga.	D5	30	Rock Creek, Kans.	G2	41
Rio Hondo (river), N. Mex.	E5	71	Riverside, Mich.	C6	53	Roberta, Okla.	K7	81	Rock Creek, Minn.	F5	55
Rio Linda, Calif.	B8	23	Riverside, N.J.	D3	69	Robert Lee, Tex.	D5	92	Rock Creek, Mo.	O4	59
Riomedina, Tex.	F8	93	Riverside, N. Mex.	B2	70	Roberts, Idaho	F6	33	Rock Creek, Ohio	J2	78
Rio Mulato, Bolivia	D4	114	Riverside, Oreg.	J4	83	Roberts, Ill.	E3	34	Rockdale, Ill.	E2	34
Rio Muni (prov.)	C4	141	Riverside, Pa.	J4	85	Roberts, Mont.	G5	61	Rockdale, Iowa	M4	39
Rion, S.C.	E3	86	Riverside, R.I.	J5	51	Roberts, Wis.	A6	104	Rockdale, Tex.	G7	93
Rio Penasco (riv.), N. Mex.	E6	71	Riverside, S.C.	F2	87	Roberts (county), S. Dak.	P2	89	Rockdale, Wis.	G10	105
Rio Puerco (riv.), N. Mex.	A3	70	Riverside, Tenn.	F4	90	Robertsburg, W. Va.	C3	102	Rockdale (co.), Ga.	D3	30
Rio Puerco (riv.), N. Mex.	A4	70	Riverside, Tex.	J7	93	Robertsdale, Ala.	C9	15	Rock Dell, Minn.	F7	55
Rio Salado (riv.), N. Mex.	B4	70	Riverside, Utah	B2	94	Robertsganj, India	D4	134	Rock Elm, Wis.	B6	105
Rio Verde, Mexico	E4	108	Riverside, Wash.	F2	101	Robert S. Kerr (res.), Okla.	M4	81	Rockerville, S. Dak.	C6	88
Rio Vista, Calif.	L1	22	Riverside, Wyo.	F4	107	Robertson (co.), Ky.	J3	43	Rockfall, Conn.	E2	27
Riparia, Wash.	G4	101	Riverside (co.), Calif.	J10	23	Robertson (co.), Tenn.	H1	90	Rock Falls, Ill.	D2	34
Riparius, N.Y.	M3	73	Riverside (res.), Colo.	L2	25	Robertson (co.), Tex.	H6	92	Rock Falls, Iowa	G2	39
Ripley, Calif.	L10	23	River Sioux, Iowa	B5	38	Robertsonville, Ga.	E1	30	Rock Falls, Wis.	C6	105
Ripley, Ill.	C3	34	River Springs, Md.	G8	48	Robertsville, Conn.	C1	26	Rockfield, Ind.	D3	36
Ripley, Maine	E5	47	Riverton, Ala.	B1	14	Robertsville, Mo.	N4	59	Rockfield, Ky.	E7	42
Ripley, Miss.	A1	56	Riverton, Conn.	D1	26	Robertsville, Ohio	H4	78	Rockfish, N.C.	G5	74
Ripley, N.Y.	A6	72	Riverton, Ill.	D4	34	Roberval, Quebec	J6	11	Rockford, Ala.	F5	14
Ripley, Ohio	C8	79	Riverton, Ind.	B6	37	Robeson (county), N.C.	G5	74	Rockford, Ill.	D1	34
Ripley, Okla.	J2	81	Riverton, Iowa	B7	38	Robesonia, Pa.	K5	85	Rockford, Iowa	H2	39
Ripley, Tenn.	B3	90	Riverton, Kans.	H4	41	Robey, S. Dak.	M6	89	Rockford, Mich.	D5	53
Ripley, W. Va.	C3	102	Riverton, Man.	G5	10	Robin, Idaho	F7	33	Rockford, Minn.	F5	55
Ripley (county), Ind.	G6	37	Riverton, Minn.	D4	54	Robins, Iowa	K4	39	Rockford, N.C.	D2	74
			Riverton, N.J.	F3	63	Robins, Ohio	H6	79	Rockford, Ohio	A4	78
			Riverton, Oreg.	C4	82	Robins A.F. Base, Ga.	E5	30	Rockford, Tenn.	O3	91
			Riverton, Utah	B3	94	Robinson, Ark.	B1	20	Rockford, Wash.	H3	101
			Riverton, Vt.	B2	96	Robinson, Ga.	B2	30	Rock Glen, Pa.	K4	85

WAGNER (väg'nēr), **WILHELM RICHARD** (1813–1883), was a German composer whose revolutionary theories had a tremendous effect on the development of opera.

Wagner was born in Leipzig, Germany. As a young man, he traveled from town to town serving as music director for several small opera companies. He longed to go to France but could not leave Germany because of debt. In 1839 he and his actress wife finally escaped to Paris. During three years in Paris, Wagner made few friends among his fellow musicians and had to borrow money continually. He was forced to spend hours on routine work, while his mind was bursting with musical ideas. In 1842 he returned to Germany to produce his opera *Rienzi*. The performance was a success, and Wagner immediately became famous. In the following years three more of his operas, *The Flying Dutchman* (*Der Fliegende Holländer*), *Tannhaeuser*, and *Lohengrin*, were presented. Because of Wagner's new ideas in operatic composition, these works were not appreciated.

During the 1840's, Wagner became increasingly involved in revolutionary activities in Germany. Forced to leave the country in 1849, Wagner took refuge in Zurich, Switzerland. There he spent ten years struggling in poverty and illness. Despite the unfavorable conditions, these years were among the most productive of his whole life. After studying the ancient sagas of the "Nibelungenlied" and the *Eddas*, Wagner began a series of four music dramas based on its legends. This cycle of operas, called *The Ring of the Nibelung* (*Der Ring des Nibelungen*) (1854–1874), included *The Rhinegold* (*Das Rheingold*), *The Valkyrie* (*Die Walküre*), *Siegfried*, and *The Twilight of the Gods* (*Die Götterdämmerung*). He stopped work on *The Ring* to write two other operas, *Tristan and Isolde* and *The Mastersingers of Nuremberg*. (See EDDAS; NIBELUNG, THE RING OF THE.)

After Zurich, Wagner lived in Venice, Lucerne, Paris, and Vienna. In Vienna he again fell into financial difficulty and had to leave to avoid imprisonment for debt. Fortunately, however, in 1864 King Ludwig of Bavaria became interested in his works. Under the king's patronage, several of Wagner's operas were performed in Munich.

The composer was given a home in Bayreuth, Germany. There he finally finished *The Ring* and saw its first complete performance in 1876 in a theater built especially for his works. Wagner spent the rest of his years in Bayreuth, but died while visiting in Venice, Italy. A yearly festival honoring him is held in the theater at Bayreuth.



Richard Wagner.

Wagner's operas are among the most powerful and emotional ever written. Wagner had some unique ideas about the opera as a form of art. He believed that the music and the drama should be fused together into a single spectacle. This blending of orchestra, voices, scenery, and story was later called "music drama." Wagner was one of the few operatic composers who wrote not only the music but also the libretto (the words of the opera). While he stressed the importance of drama, he also increased the size of the orchestra and made it a more important element in the opera. Until his time, operas had always been divided into songs, called arias, and dialogue, called recitative. Wagner, however, felt that music should flow continuously throughout the opera and did away with the old tradition. Another characteristic of his music was the use of the leitmotif, a short musical phrase used to identify a specific character, mood, or setting. The leitmotif added greatly to the expression of emotion and helped to unify the story and the music. (See OPERA; MUSIC, Romantic Music.)

WAINWRIGHT (wān'rit), **JONATHAN MAYHEW** (1883–1953), hero of the battles of Bataan and Corregidor, commanded the U.S. forces in the Philippines when they surrendered to the Japanese early in World War II.

Wainwright was born in Walla Walla, Washington, the son of a career cavalry officer, who later died in service in the Philippines. Entering the U.S. Military Academy in 1902, the slightly





Jonathan Wainwright.

built Wainwright was quickly given the nickname of "Skinny," which stayed with him throughout his career.

He served in the Philippines and then in France during World War I. In 1911 he married Adele Howard Holley and they had one son. By 1940, when Wainwright returned to the Philippines, he had

become a major general. Wainwright was second in command to General Douglas MacArthur when on December 7, 1941 (U.S. time), Japanese bombers raided Clark Field, Manila's air base. More than one-half of the U.S. planes were destroyed on the ground.

The Japanese invaders gradually forced the U.S. troops to retreat to the Bataan Peninsula in Manila Bay. Following the surrender of Bataan, which he authorized, Wainwright and some of his forces escaped to Corregidor, a tiny island-fortress just offshore. There in the island caves he and his men tried to withstand starvation and the constant bombardment by the Japanese. The men finally surrendered.

Wainwright was imprisoned on the mainland of Asia. He was finally rescued from a Japanese prisoner-of-war camp in Manchuria by Soviet troops in August 1945. On September 2, 1945, Wainwright took part in the formal Japanese surrender on the deck of the U.S.S. *Missouri*. Later that month U.S. President Harry S. Truman awarded Wainwright the Congressional Medal of Honor for "intrepid and determined leadership against greatly superior enemy forces and the final stand of beleaguered Corregidor."

WALDENSES (*wəl dĕn'sēz*), originally followers of a 12th-century French religious movement, are today members of a small Protestant church.

The facts about the early history of the Waldenses are not clear. Their origin has been traced back to Peter Waldo, or Valdes, a rich merchant of Lyons, France. In about 1170 Waldo gave up all his possessions in order to follow the New

Testament teachings on poverty. He became a preacher and attracted many followers. These followers, first known as the "poor men of Lyons," formed settlements on the French side of the Alps. They were refused recognition by the Roman Catholic church, and in 1184 the church authorities banned them from preaching without permission. As a result, the Waldenses organized a separate church and appointed their own ministers. The Bible was the basis of their teachings and life, and Waldo translated the New Testament into Provençal, then the common language of southern France.

The Waldenses, as Waldo's followers were called, grew rapidly and widely, despite persecution. At first the Roman Catholic church combated them by excommunication, but by the 13th century they were being burned as heretics. The Waldenses spread to Bohemia where they joined the followers of John Huss. The center of the movement, however, remained in northern Italy and southern France. During the Reformation they came into contact with Protestant reformers from Germany and Switzerland. In 1532 a synod of Waldenses adopted a Protestant confession of faith and formally renounced the Roman Catholic church. (See REFORMATION.)

Today the Waldenses are organized into the Waldensian Protestant church, having about 29,000 members in Italy, 12,500 in South America, and a few small communities in the United States. Both the chief governing body of the church and its theological seminary are located in Italy.

WALES, (*wālz*), **UNITED KINGDOM**, is a large peninsula on the western part of the island of Great Britain. It is one of the four main divisions of the United Kingdom along with England, Scotland, and Northern Ireland. Wales is bordered by England on the east, and on its other three sides it is rimmed by the Irish Sea, St. George's Channel, and the Bristol Channel.

Wales is a mountainous land, noted for its mining and manufacturing industries. The people of Wales are called Welsh. Although Wales has been united with England since 1536 its people are known for their great national spirit. They have preserved their own ancient language and many customs.

The peninsula of Wales is about 140 miles long, and it ranges from about 25 to 105 miles in width. The Cambrian Mountains cover most of the country's area of 8,016 square miles. They are the highest in the north where they rise to the peak of Mount Snowdon, 3,560 feet high. This is the highest mountain in all of England and Wales. In the center of the peninsula, Plynlimon (2,468 feet) is the dominant peak. Brecon Beacons, rising to 2,906 feet, is a smaller range of hills in South Wales that runs in an east-west direction parallel to the Bristol Channel.

The mountains have been cut on all sides by river valleys. In the north the rivers are shorter and their valleys wider and less steep. The rivers Conway and Clwyd are important streams that flow north to the Irish Sea. On the west side of Plynlimon many streams follow winding courses to St. George's Channel. From the eastern slopes of the central hills several of the rivers flow for



Central Press Photos Ltd.

Snowdon is the highest mountain in all of England and Wales. The peak is in the misty, lake region of Caernarvonshire in northwestern Wales.

most of their courses through England before they reach the sea at the Bristol Channel. The Severn and the Wye are the longest of these streams.

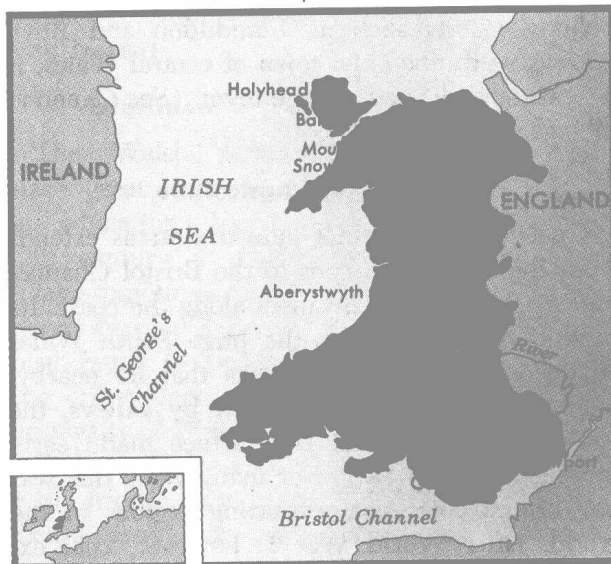
The mountains are fringed with coastal plains, which are narrow in the south and west. The level lowland areas of northwest and northern Wales include the Dee River Valley, Lleyen Peninsula, and the island of Anglesey. The Menai Strait separates this large island from mainland Wales.

Two bridges connect the island to the mainland: the Menai Bridge, built in 1826, and the Britannia Bridge, a tubular railroad bridge completed in 1850.

Bala Lake is the one large natural lake of Wales, though there are many small lakes in the mountains. Several other large lakes are man-made and serve as reservoirs.

The climate of Wales is characterized by mild winters and cool summers, with abundant rainfall throughout the year. Areas that are above 1,000 feet receive more than 60 inches of rain a year. Temperatures do not vary greatly from season to season in most of the country. The coldest month usually averages above 40 degrees Fahrenheit, and the warmest month, below 60 degrees. There is more variation in the southeastern sec-

Locator map of Wales.





Tom Hollyman—Photo Researchers, Inc.

Professional rugby football draws huge crowds in Cardiff (above). It arouses as much enthusiasm in Wales as baseball and football do in the United States.

tion. During December and January there is considerable snowfall in most areas.

The Welsh People

The Welsh people have basically the same ancestry as the English. They represent a mixture of Celts, Angles, and Saxons with the original inhabitants of the area. Romans and, later, Normans also added to the racial characteristics of the Welsh. Today, the people of Wales may show marked physical differences from region to

Mining towns dot the industrial area of South Wales. The region's industry is based on abundant coal deposits.

W. Suchitzky



region. The Welsh take great pride in their ancient heritage and language. The Welsh were Christians with a literature of their own at the time of the Anglo-Saxon invasion. Their language stems from the tongue of the Celts and is still used as a first or second (after English) language. Many Welsh schoolchildren receive some training in their

native language. Welsh literature extends from about the mid-6th century to the present. The finest collection of ancient Welsh tales is the *Mabinogion*. There are newspapers and magazines published in Welsh today, and the British Broadcasting Corporation produces many programs in Welsh.

The chief annual cultural event is the National Eisteddfod, which features competitions in music, prose, and poetry. It is conducted entirely in Welsh. The Welsh male voice choirs are world famous. The noted 20th-century poet Dylan Thomas was Welsh.

About half of the Welsh people live in the south, in the industrial area that centers around the capital, Cardiff, and the ports of Swansea, Port Talbot, and Barry. In North Wales the towns are small, and the best-known ones are popular holiday resorts such as Llandudno and Rhyl. Aberystwyth, the chief town of central Wales, is a seaside resort and college town. (See CARDIFF, WALES.)

Industry and Agriculture

One of Britain's chief industrial areas extends from the Brecon Beacons to the Bristol Channel and from Cardiff to Swansea along the coast. Its production is based on the huge South Wales coalfield and iron ore deposits that lie nearby. Where the hills have been cut by valleys, the coal seams exposed at the surface made early mining relatively easy. For many years this was one of the chief coal exporting regions in the world. After World War I, however, coal ex-

ports declined as mines were developed in other countries and as oil and waterpower came into wider use.

The decline of exporting caused great suffering. Such a large proportion of the people in South Wales depended on the coal mines for their livelihood that the closing of a mine meant almost total unemployment in many of the towns. The industrial boom of World War II improved the situation, and afterward, with the help of the government and trading associations many new industries were introduced. In the area there are steel mills, chemical works, textile plants, and many other types of industry. There is a second smaller coalfield in North Wales near Wrexham. Steel is also manufactured in this area, as are synthetic textiles.

Much of the Welsh peninsula is farm or grazing land. The higher slopes serve as pasture land for sheep, which are highly regarded on the London market for their meat. In the valleys, small family farms raise cattle and pigs. On the flat lands, oats and potatoes are important crops. In the south and in areas fringing the western and northern coasts there are fertile lands suitable for dairy farming.

The ports of Holyhead in the north and Fishguard in the south are important communications links with Ireland. There is direct rail service from London to these two Welsh ports, which have regular steamer connections with Ireland.

Education

The Welsh people place great importance on education. In the 19th century a whole village sometimes raised money to send a bright local pupil to college. The first college of the University of Wales was built at Aberystwyth with funds that had been amassed from col-

lections made throughout the country. The university in the late 1960's had four branches and more than 9,000 students. The other branches are located at Cardiff, Bangor, and Swansea.

An act passed in 1889 gave Wales a system of state-aided secondary schools—12 years before England had such a system. Today the public school system operates under the same regulations as those of England. All children in Wales between the ages of 5 and 15 must attend school. The National Library at Aberystwyth and the National Museum at Cardiff are other important cultural institutions of Wales.

History

In ancient days, when invaders from Europe swept over Britain, Wales was the refuge for older inhabitants. As an invading army advanced across England the inhabitants would flee westward into the Welsh hills.

Other early settlers reached Wales by sea, many of them originating from the area around the Mediterranean. When the Celtic invaders occupied the country, they imposed their culture on the existing societies.

The Romans subdued and occupied Wales in the 1st century A.D. After they withdrew, Britain was invaded by Angles and Saxons, but these

Caernarvon Castle, in North Wales, was built in the 13th century. The fortress was erected by the English, who were bringing the Welsh under their control.

Fritz Henle—Photo Researchers, Inc.



groups were unable to conquer the mountain strongholds of Wales. Celtic culture and Christianity survived in Wales after both had been largely driven out of England. The Saxons called the people *Welsh*, meaning foreigners. The Welsh called themselves *Cymry*, meaning fellow countrymen.

The Anglo-Saxon king Offa built an earthwork wall, called Offa's Dike, to protect his kingdom from the Welsh. Parts of the structure have survived to the present day. In the 10th century Howel the Good became king of all the Welsh and introduced a unified law code, some of which is preserved in modern Welsh lawbooks.

The Welsh had a new and more difficult enemy to face after the Norman Conquest of England in 1066. By the end of the 11th century South Wales was firmly under Norman control. The Welsh were driven out of southwest Pembrokeshire, and the Normans placed English and Flemish colonists there.

There was some freedom for Wales while the barons and the king in England struggled for power during the 13th century. When conditions improved in England, however, the kings were again able to turn their attention to Wales. The country was completely overrun by the armies of Edward I in the last part of the 13th century. His son was born in Caernarvon Castle. He was given the title of prince of Wales, and ever since that time the eldest son of the British monarch has carried that title.

Between 1400 and 1412 Owen Glendower led a Welsh revolution. Its failure resulted in the extension of English power, but Wales was not united with England until 1536. An act passed in that year made Welshmen completely equal with Englishmen under the law, and it also stated that all official business had to be carried on in English. Another act, passed in 1543, further established the unification of the countries.

After this there was no political difference between England and Wales. Both have had the same monarch, Parliament, and laws, although Wales is considered a separate unit of the United Kingdom. Since April 1974 it has been divided into eight counties. The Church in Wales is independent of the Church of England.

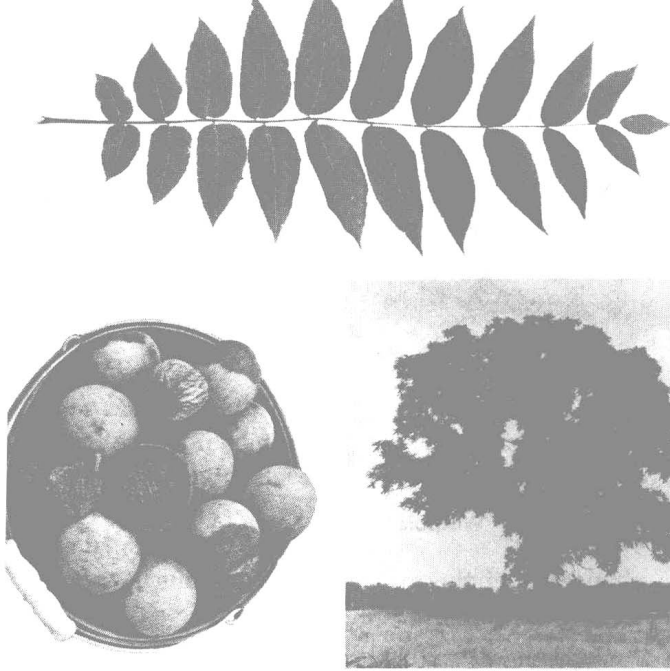
Until the Industrial Revolution Wales was poor

and sparsely populated. In the late 18th century, coal and iron ore mining began on a large scale, and the economy improved rapidly. Between 1801 and 1851 the country's population doubled. As the population and economy grew, however, the country had to struggle to keep its national identity. Great efforts were made to retain Welsh institutions and promote the Welsh language. In the 20th century the main British political parties recognized the separate national identity of Wales. Cardiff was granted the status of capital city in 1955, and in 1964 a secretary of state for Wales with a seat in the British cabinet was appointed.

Wales had a population of 2,731,204 in 1971. In 1973 the population was estimated at 2,749,280.

WALLACE (*wäl' ūs*), **SIR WILLIAM** (1270?-1305), is the national hero of Scotland. He rallied the resistance to King Edward I of England. (See EDWARD [Kings of England].) Wallace was a son of Sir Malcolm Wallace of Elderslie, Renfrewshire. He first appeared in the records of history as the leader of a band that attacked the English garrison at Lanark, Scotland, in May 1297 and killed the English sheriff who had been installed by Edward I. When an English army approached, the Scottish nobles deserted Wallace. He gathered a large company of Scots, however, and at Stirling, a midland county, they fought one of the great battles of Scottish independence. At Stirling Bridge they defeated the English army and drove it out of Scotland in September 1297.

Wallace was knighted in December 1297 and became Guardian of the Kingdom. He proceeded to regulate Scotland's affairs until another English army was sent. On July 22, 1298, he was overpowered in the battle of Falkirk. The record of Wallace is hazy for the next four years. It is thought that he took refuge in the mountains for a time and that he went to France and possibly to Italy during the period. He was arrested on August 5, 1305, near Glasgow, probably as a result of treachery. He was taken to London where he was charged with treason to the king. Wallace denied the charge because he had never sworn allegiance to Edward, but he was condemned and executed on the same day.



(Left and below far left) John H. Gerard, (below center) Jesse Lunger—National Audubon Society, (below right) Jack Dermid—National Audubon Society



Black walnut trees are important for their nuts and wood. The tree is also planted for shade or ornamentation. Its leaves are oval or oblong. Petalless flowers of both sexes grow on the same tree. Within the tree's fruit is the seed, or nut, which is covered with a hard, bony shell. The nuts are an important ingredient in candies and cookies.

food for wildlife, but only a few varieties taste good to man.

The English walnut tree, *J. regia*, bears the most highly prized nut of any species. The *J. regia* is believed to have originated in Persia (Iran). The Romans may have taken it to England. Commercial production in planted orchards is based on thin-shelled types in which the kernel, or nutmeat, content makes up from 40 to 60 percent of the dry weight, unshelled. About 15 other species of walnut tree, which bear only hard-shell nuts, are usually more valued for their timber. The largest crops of *J. regia* are grown in California. About 70,000 to 90,000 tons in the shell are produced there annually. France, Italy, China, and Turkey also produce large amounts for world trade. Walnuts are high in oil, food energy, and protein content.

Of the six species of *Juglans* native to the United States, *J. nigra* and *J. hindsii*, a somewhat smaller black walnut of Northern California, are used most widely for lumber. The black walnut wood is favored for its strength, beauty, and lasting quality. It is used for furniture, paneling, carving, and gun stocks. The nuts of the trees are used in making ice cream, candy, and cookies.

Black walnut trees grow mainly in the Temperate Zone, but some species withstand severe

cold. Some are native to Manchuria, Japan, Argentina, and Colombia, and several have been reported in Central America. (See NUT; TREE.)

WALPOLE (*wəl'pōl*), **HORACE** (*hōr'ūs*) or **HORATIO** (1717–1797), was an English politician and writer who has been called the best letter-writer in the English language. His wide correspondence, which has been collected and published, is an important, intelligent, and interesting account of his age. His father, Sir Robert, First Earl of Orford, and prime minister of England, was his idol. Horace was educated first at Eton, where he formed a group called the "Quadruple Alliance," whose common interest was literature. Other members were Thomas Gray, Richard West, and Thomas Ashton. In 1735 Walpole entered King's College, Cambridge University, where he received a liberal education. (See WALPOLE, SIR ROBERT.)

In 1739 he traveled with Thomas Gray to Europe. While in Italy they quarreled and did not renew their friend-

Horace Walpole.



ship for a number of years. Walpole returned to England in 1741. He was elected to Parliament, where he served until his retirement in 1768. Throughout his life he retained an interest in politics, but his record as a member of the House of Commons demonstrated little more than a defense of his father's views and actions.

In 1747 he leased, and one year later purchased, land and a small villa on the Thames River. He gradually turned the place into a "little Gothic castle" with towers, battlements, and intricate formal gardens. He named the house "Strawberry Hill." In a cottage on the grounds he installed a private printing press in 1757. First editions of many of his own works were printed there as well as works by his friends. In 1791, Walpole succeeded his nephew to the title of Earl of Orford.

Walpole lived his adult years primarily as a writer. His many works include books of verse, novels, memoirs, diaries, antiquarian and historical studies, satires, art catalogs, and notes on art as well as the countless letters to his friends for which he is best known today.

His novel *The Castle of Otranto* (1765) became famous as the first of the modern romances of mystery and horror known as Gothic novels. *The Mysterious Mother* (1768), a tragedy in verse, is still read, though it remains at best a merely passable work from an age of notoriously poor tragedies. His special skill was in describing people and the political events of his day.

WALPOLE, SIR ROBERT (1676–1745), is regarded as the first prime minister of England, although the title was not then in use. He was born at Houghton Hall, Norfolk, into a family of landed gentry. He was educated at Eton College and Cambridge University. In 1700 Walpole entered Parliament as a Whig. He became secretary of war in 1708 and treasurer of the navy in 1710. After the Tories gained control of Parliament in the 1710 elections, they charged him with misuse of money. In 1712 he was imprisoned in the Tower of London.

Back in favor at the accession of George I in 1714, Walpole was made first lord of the treasury and chancellor of the exchequer in 1715. He soon began to disagree with the foreign policies of



Sir Robert Walpole.

other Whig leaders, however, and in 1717 he resigned from the ministry. George I made him paymaster general of the forces in 1720. His power of persuasion in Parliament rescued the court and the Whigs from the financial scandal known as the South Sea Bubble. In 1721 he was reappointed first lord of the treasury and

chancellor of the exchequer, remaining in power until 1742. He was knighted in 1725.

In Walpole's time there were no political parties as they are known today. Certain issues divided English people into Whigs and Tories, but personal interests mattered most. The king chose his ministers, and they had to create a majority in the House of Commons. Walpole remained a leader of government for such a long time because he retained the support of George I and of George II, who became king in 1727. Further, Walpole built a large following in Parliament by his use of patronage, which is giving a person a job, or office, in return for his political support. Walpole never did get complete control of Parliament, but he kept himself and his party in power there because his policies of peace, lower taxation at home, and increased trade abroad won him the support of independent members of the Commons.

Walpole was determined, however, to have complete control. In 1730 he forced Charles Townshend, the foreign secretary, to resign, and he, himself, took over the administration of foreign affairs. Opposition against him grew. In 1739 he was forced to declare war on Spain. The opposition thought him incapable of directing the war, and in 1742 his resignation was forced on a minor issue. The king created him earl of Orford.

Walpole delighted in works of art. His collection of paintings was one of the finest in Europe. Eventually his grandson sold it to the empress of Russia. Later it was placed in the Hermitage Museum in Leningrad.

WALRUS (*wal' rūs* or *wäl rus*) is a large, aquatic, fish-eating mammal, *Odobenus rosmarus*, belonging to the family Odobenidae. The walrus has a heavy, swollen body, short neck, and small head. The muzzle is fringed by hundreds of thick bristles. Like their close relatives, the seals and sea lions, walruses have flippers instead of legs. The hind flippers are able to turn forward to aid them in waddling about.

Adult male walruses may measure 10 to 12 feet long and may weigh more than a ton. The skin is thick, wrinkled, and almost hairless in the adults. It is yellowish grey in color. The upper canine teeth may grow to a length of 40 inches in adult males and somewhat less in females. They use these tusks to help haul their huge bulk from the water.

Walruses inhabit the open water of the Arctic Ocean near the coasts or edges of polar ice. They are seldom found on land. Sociable animals, walruses live in groups. The young are born singly, every other year, after a gestation period of 11 to 12 months.

Walruses feed on fish, mollusks, and other marine life. When feeding, the animal dives and often stands on its head in the water as it forages about the ocean bottom. The tusks and the sensitive bristles on the muzzle help the walrus in scraping and filtering food from the mud.

An adult walrus may be 10 to 12 feet long and weigh more than a ton, left. A thick fringe of bristles grows on its muzzle. Walruses are sociable animals, generally living in herds, right.



The Eskimos of the Far North hunt walruses for their meat and thick layer of fat, or blubber, that provides both food and fuel. The bones and skin are also used, and the ivory from the tusks is especially valued. (See SEAL.)

WALTON (*wól' tūn*), **IZAACK** (*i' zik*) (1593–1683), was an English writer noted as the author of *Lives*, a collection of biographies, and *The Compleat Angler* (1653), a book on fishing.

Walton was born at Stafford, the son of an alehouse keeper. As a young man he moved to London and became a clothier. His first wife, whom he married in 1626, bore him seven children, all of whom died young. His wife died in 1640, and he remarried in 1646. By this marriage he had two surviving children.

Walton's friends throughout his life were men of culture and learning. He knew many of the leading authors and poets of his time. His *Lives* included sketches of John Donne, at whose deathbed he was present, Sir Henry Wotton, George Herbert, Richard Hooker, and Dr. Robert Sanderson. *Lives* is an important early work in the field of biography.

The Compleat Angler was so popular during Walton's lifetime that it went through five editions. Lovers of fishing have praised the book and its author. Not only does the work describe

Photos, (left) Russ Kinne—Photo Researchers, Inc., (right) Karl W. Kenyon—National Audubon Society



angling techniques, but it also gives a picture of the peace and simple pleasures of country life.

Walton's fame as the author of this book has diminished somewhat in recent years because of the discovery of a similar book dated 1577. This book, *The Arte of Angling*, by an anonymous author, appears to have been a major source for Walton's book.

WANAMAKER (*wän' ŭ mā' kēr*), **JOHN** (1838–1922), was the founder of one of the first large department stores in the United States. He was born in Philadelphia, Pennsylvania. He left school at the age of 14 and became an errand boy in a bookstore. In 1856 he went to work as a clerk in a men's clothing store. Five years later he was able to establish, with Nathan Brown, the clothing store of Brown and Wanamaker. Their partnership continued until Brown's death in 1868. In the following year John Wanamaker and Company was opened. Wanamaker



John Wanamaker.

bought the freight depot of the Pennsylvania Railroad in 1875 to house the store. It became a collection of specialty shops under one roof, a department store. In 1896 Wanamaker acquired what was formerly the A. T. Stewart Store in New York City.

Wanamaker served as postmaster general in the administration of President Benjamin Harrison (1889–1893). He also was active in the Young Men's Christian Association, serving as secretary of the Philadelphia branch from 1857 to 1861.

WANDERING (*wän' dēr' ing*) **JEW, THE**, is a legendary figure who mocked Jesus on His way to the cross and was condemned to wander the Earth until the day of judgment. In one version, the Jew was a shoemaker at Jerusalem, Palestine, who would not allow Jesus to rest on the threshold of his shop. In this instance, Jesus is said

to have told him, "I shall enter into My rest, but you shall wander restless." In another version, the culprit was the porter at Pontius Pilate's judgment hall, who struck Jesus, saying, "Go quicker, Jesus, why do you loiter?" To him, Jesus is said to have answered, "I go, but you will wait till I return." The legend has also been treated as symbolic of the wanderings of the Jewish people. The most famous account of the legend is in Eugene Sue's novel *The Wandering Jew*.

WAR (*wôr*) **AND WARFARE** (*wôr' fār'*). The first historical accounts of organized warfare come from Egypt. There, 2,500–3,500 years before the time of Jesus Christ, the soldier belonged to a definite "caste" or separate social group second only to the priests. There were at that time foot troops only. The horse was used in war solely for drawing chariots. The bow and the spear appear to have been the standard weapons. Against these early Egyptians the Assyrians brought heavy infantry and cavalry. They considered mounted troops of secondary importance, whereas the Persians counted on their cavalry and dismounted archers to win the battle.

When an army was ready to fight, it drew up on a broad front on some flat, open plain. If the enemy desired battle, it lined up also. Otherwise it merely stayed away. No effort was made by either side to choose a favorable position or to force a fight on an unwilling opponent. In battle there were no reserves.

Egyptian weapons included a rather poor infantry bronze sword, a bronze-tipped spear about six feet long, and a wooden shield large enough to protect the whole body. Later, the shield was metal covered. The light infantry (slingers, archers, etc.) had no shields or other armor.

Persian foot troops, like the Egyptians, carried short spears and swords, also a shield, round and smaller than that of the Egyptians. The Assyrian weapons resembled those of the Egyptians and Persians. The Assyrian infantryman, carrying a short spear and a round shield but no sword, wore a helmet, while the heavily armed archer was equipped with helmet, body